



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
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OFFICE OF THE REGIONAL
ADMINISTRATOR

NOV 07 2016

The Honorable Chairman Mary Jane Miles
Nez Perce Tribe
P.O. Box 305
Lapwai, Idaho 83540

Dear Chairman Miles:

Thank you for your letter of September 6, 2016, concerning the effects of total dissolved gas in the mainstem of the Snake and Columbia Rivers. Your letter discusses the discrepancy between the total dissolved gas water quality standards for the states of Oregon and Washington for the Columbia River, and specifically requests information from the U.S. Environmental Protection Agency on whether a single 120% tailrace total dissolved gas standard at the eight mainstem Columbia and Snake River dams could offer additional survival benefits for fish passage "without unduly affecting other aquatic resources."

The EPA has been engaged in work efforts to address and reduce TDG in the Columbia and Snake Rivers for the past two decades. The first point we would like to emphasize is that both the Oregon and Washington TDG provisions allowing for TDG in excess of the statewide TDG standards of 110% of saturation are specific to the Columbia and Snake Rivers. These special provisions take into account that increased spill resulting in TDG levels above the 110% standard can provide additional salmon and steelhead survival benefits at the Columbia and Snake River dams.

In regard to information on the benefits and risks of a single 120% tailrace TDG standard, the EPA does not possess any information beyond what is generally available through state and federal processes that have evaluated this issue. In 2009, Washington Department of Ecology and the Oregon Department of Environmental Quality issued a report analyzing the removal of Ecology's 115% forebay TDG criterion (<http://www.ecy.wa.gov/biblio/0910002.html>). Based on that two year study effort with input from a stakeholder adaptive management team, Ecology made the following conclusion:

"Ecology determined that there would be a potential for a small benefit to salmon related to fish spill if the 115% forebay criterion was eliminated, but there would also be the potential for a small increase in harm from increased gas bubble trauma. The weight of all the evidence from the available scientific studies clearly points to detrimental effects on aquatic life near the surface when TDG approaches 120%. Based on the information in this document, Ecology does not believe the overall benefits of additional spill versus additional risk of gas bubble trauma are clear and are sufficient for a rule revisions."

Since 2009, there continues to be ongoing research on the risks and benefits associated with increased spill at the Snake and Columbia River dams. We understand that the best available science based on results from gas bubble trauma (GBT) monitoring program indicates that spill levels resulting in tailrace TDG levels of (\leq) 120% are generally safe for juvenile salmon and steelhead with increased incidence of GBT symptoms $>121\%$.

We also understand that there would be a potential for increased salmon and steelhead survival benefits from removing the 115% TDG provision from Washington's water quality standards and having only a 120% tailrace standard in place. The extent of the benefit appears to depend on variety of assumptions and scenarios. It is also important to note that current spill at the Snake and Columbia River dams is limited by dam specific limits (e.g., maximum spill flow or % spill flow) that in many cases result in downstream tailrace and forebay TDG levels below the TDG standards. Thus, under the current FCRPS BiOp operations, spill is limited by other factors than just the TDG standards. Nonetheless, given the important role of Oregon DEQ and Washington Ecology in establishing water quality standards for shared Columbia/Snake waters, we look forward to their continued thoughtful engagement.

The EPA also notes that the benefits of spill are related in part to decreasing salmon and steelhead exposure to adverse conditions from elevated water temperatures in the Columbia and Snake Rivers and view spill as an important mitigation strategy. With projected increasing temperatures due to climate change and the likelihood of more low flow/high temperature years similar to 2015 in the future, we will need to examine increased spill and other strategies to minimize risks to salmon and steelhead.

The EPA recognizes that there is a convergence of opportunity in the next couple of years, given work on the Columbia River System Review Environmental Impact Statement, the Federal Columbia River Power System Biological Opinion and the Columbia River Treaty, that can provide a platform to refine the policy and regulatory framework for TDG for the Columbia and Snake Rivers. We are committed to working with our Federal, State and Tribal partners, to develop a stronger ecosystem approach to the Columbia and Snake Rivers that recognizes climate change through provision of appropriate mitigation strategies. We acknowledge that future TDG decisions are a critical consideration for those future decisions.

Thank you for bringing this issue to our attention. The EPA recognizes our trust responsibility to the Nez Perce Tribe and we are committed to work with you as we engage others to ensure effective TDG management in the Columbia and Snake Rivers.

We look forward to further engagement with the Nez Perce Tribe and others on this issue. Please feel free to contact me at (206) 553-1234, or Dan Opalski, Director, Office of Water and Watersheds, at (206) 553-1855.

Sincerely,

A handwritten signature in black ink, appearing to read "Dennis J. McLerran", with a stylized flourish at the end.

Dennis J. McLerran
Regional Administrator